PROCEDURE FOR CAPILLARY SAMPLING

SUBJECT:

To prevent contamination of a capillary blood lead sample

PURPOSE:

Routine activities are necessary to ensure the most accurate test results when taking a capillary sample.

PROCEDURE: Blood lead screening by capillary method

Due to the high potential for lead contamination of capillary specimens during collection, it is strongly recommended that staff receive training to assure proficiency and reduce the incidence of false positive results. Precautions are absolutely necessary to prevent contamination of the blood by atmospheric and surface lead dust. Dust proof containers are needed for blood draw supplies. Soap and water cleaning of the patient's draw site and Universal Precautions are a must at the time of capillary screening. Universal Precautions are necessary at the time of a venous draw.

Collection technique is of primary importance when obtaining samples for blood lead testing. Lead is everywhere in the environment.

While capillary blood draws are recommended for initial screenings, venous draws can be done at the provider's discretion.

PRECAUTIONS TO PREVENT CONTAMINATION:

1. Lead equipment should not be used for other tests.
2. All lead equipment should be kept in a dust-proof supply container.
3. Try to avoid touching equipment when transferring it into the dust-proof container.

ITEMS MAINTAINED IN THE DUST-PROOF CONTAINER:

1. Paper towels
2. Soap
3. Alcohol wipes
4. Gauze
5. Lancets
6. Paper towels
7. Filter paper card
8. Ziploc bag

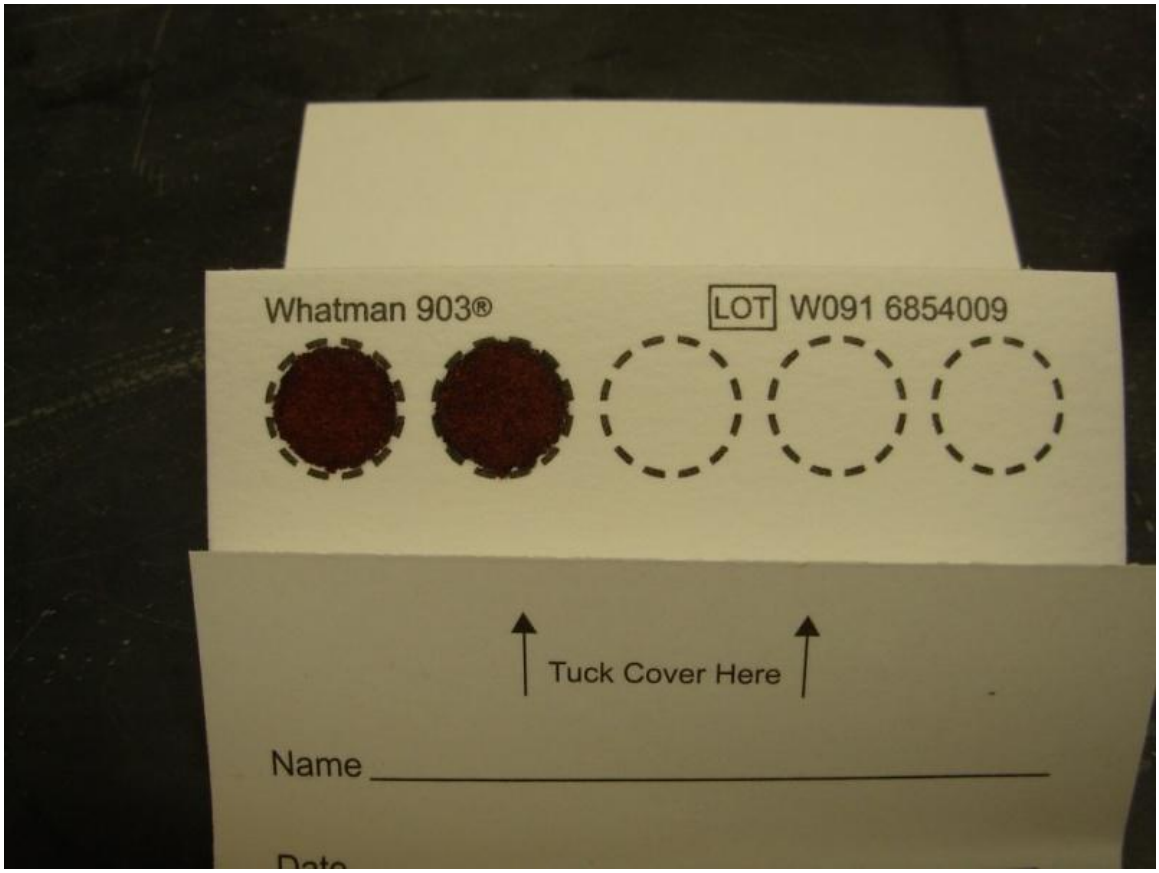
PROCEDURE

Note: Use Universal Precautions. Information on Universal Precautions can be found here: http://www.cdc.gov/niosh/topics/bbp/universal.html

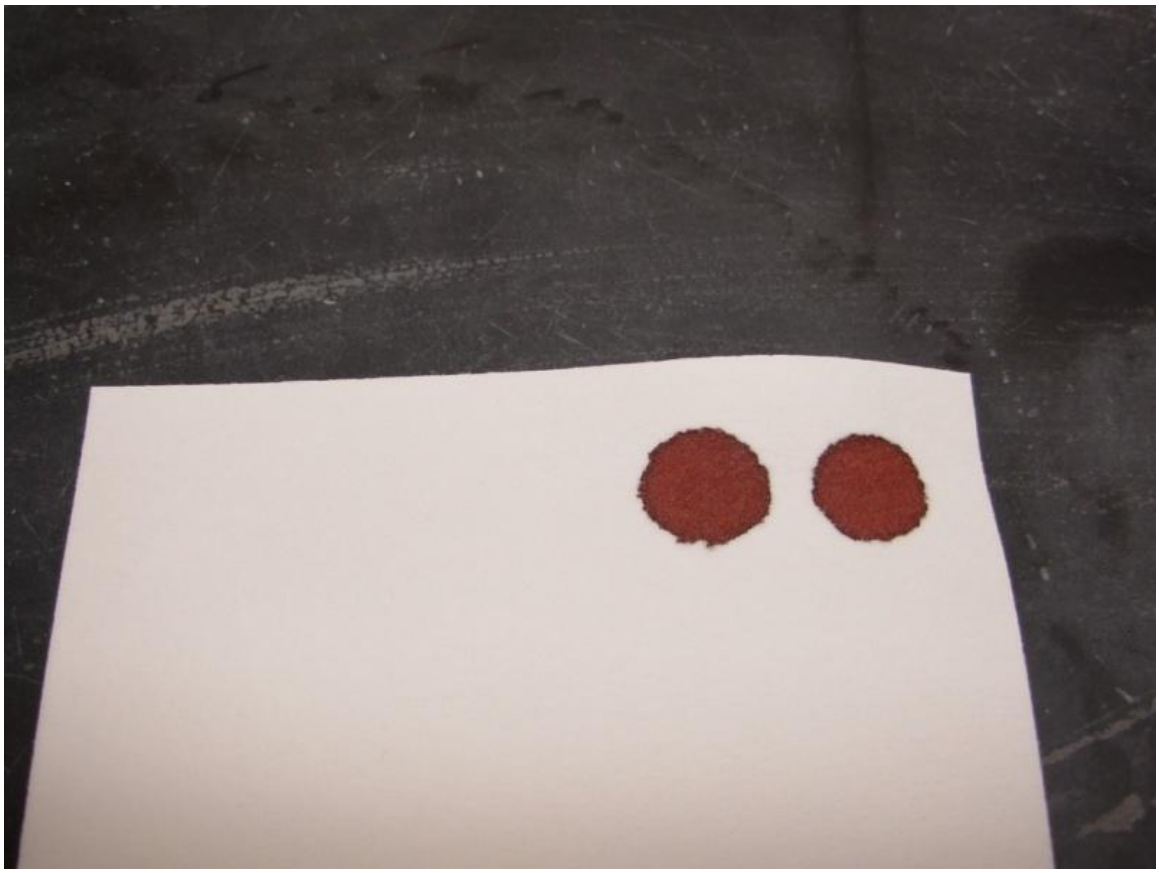
1. Discuss reason for screening with parent or guardian.
2. Screener should wash hands before opening and handling equipment kept in the dust-proof supply box.
3. Cover clean work surface with paper towels from the dust-proof supply box.
4. Equipment should be individually placed on the above paper towels for each child. The following items should be available for each test:
    a. Gauze
    b. Alcohol wipe
    c. Lancet (to allow for sufficient flow of blood, lancet should be at least 2.0 mm)
    d. Filter paper card
    e. Adhesive bandage
    f. Soap
    g. Powder-free gloves
5. The filter paper card must be clearly labeled with the following information:
    a. Child's name
    b. Please affix a tube label ID sticker to the filter card cover as well. You will need to enter this number into LIMSNET. When entering the sample into LIMSNET, please type "filter" into the sample type field Keep the corresponding label ID sticker for your records.
6. Wash child's hands or other puncture area with soap and water. Dry with paper towel from dust-proof supply box. Once hands have been washed, instruct child not to touch anything. Child's hands should be held at the wrist to prevent contamination.
7. Have parent/guardian or staff hold child securely on his/her lap.
8. Implement Universal Precautions activities.
9. Open the flap of the filter paper card and lay the card on a flat surface. Do not touch any part of the filter paper or the inside of the filter paper cover (the shiny part). **Do not** fold the flap of the cover under the filter paper. External surfaces of the card should be considered potentially contaminated.
10. Prepare the patient's finger by thoroughly scrubbing the tip with an alcohol wipe. Allow the finger to air dry for 30 seconds.
11. Pierce the finger with a lancet. Choose a draw site that will not be contaminated by blood flow underneath a fingernail. Wipe off the first drop of blood with sterile gauze.
12. Allow a large drop of blood to collect at the draw site and touch it gently to one of the printed circles on the filter paper. Allow the card to absorb the blood until the circle is full. **Do not allow the finger itself to touch the filter paper.**
    a. See below for examples of acceptable and unacceptable samples.
13. While massaging the finger may be helpful in increasing blood flow, avoid squeezing the area immediately near the draw site.

14. Repeat Step 12 to fill all circles on the card. For each circle, allow a new drop of blood to form. **While it is helpful to fill all five circles, only two properly obtained circles are necessary for testing.**
15. Clean the blood draw site and cover with a bandage, if necessary (a bandage is not necessary if the draw site has stopped bleeding by the time the patient leaves the clinic).
16. The blood spots must be allowed to dry, without the card flap over the spots, in an area away from direct sunlight for at least four hours. During drying, the cards should not be heated, stacked, or allowed to touch any surfaces. A drying rack may be helpful in this regard. Once the circles have dried, close the flap over the circles and place in Ziploc bag.
17. Cards may be stored at room temperature, away from direct sunlight, for up to four weeks. To mail to the lab, place the bagged samples into the provided postage paid envelope. Each sample must be bagged individually, but up to six bagged samples may be placed in each envelope. **Include the LIMSNET cover sheet in the envelope as well** (you do not need to include individual patient forms; please send the cover sheet instead). Tape the envelope shut and print "Blood Lead Lab" in the space provided on the front (see photo).

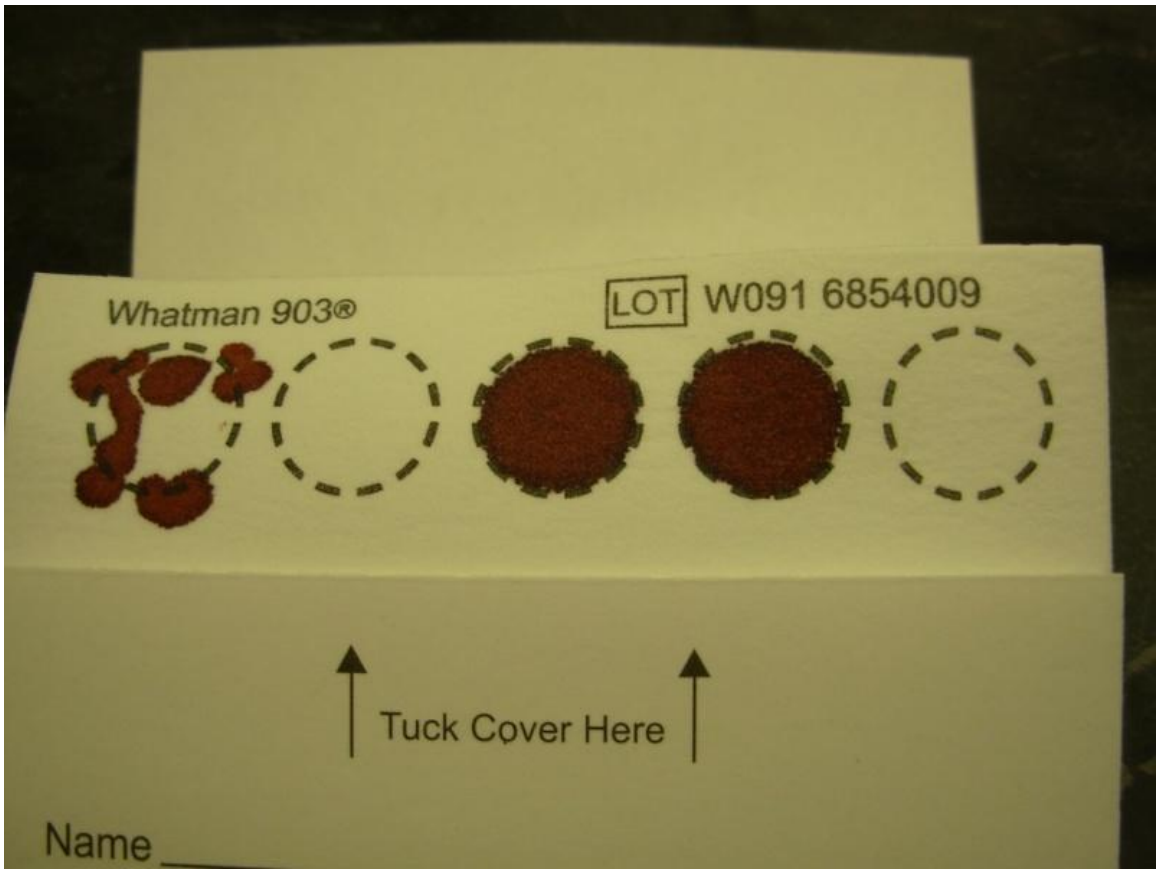
Examples of Acceptable Specimens



Acceptable Specimen: Front

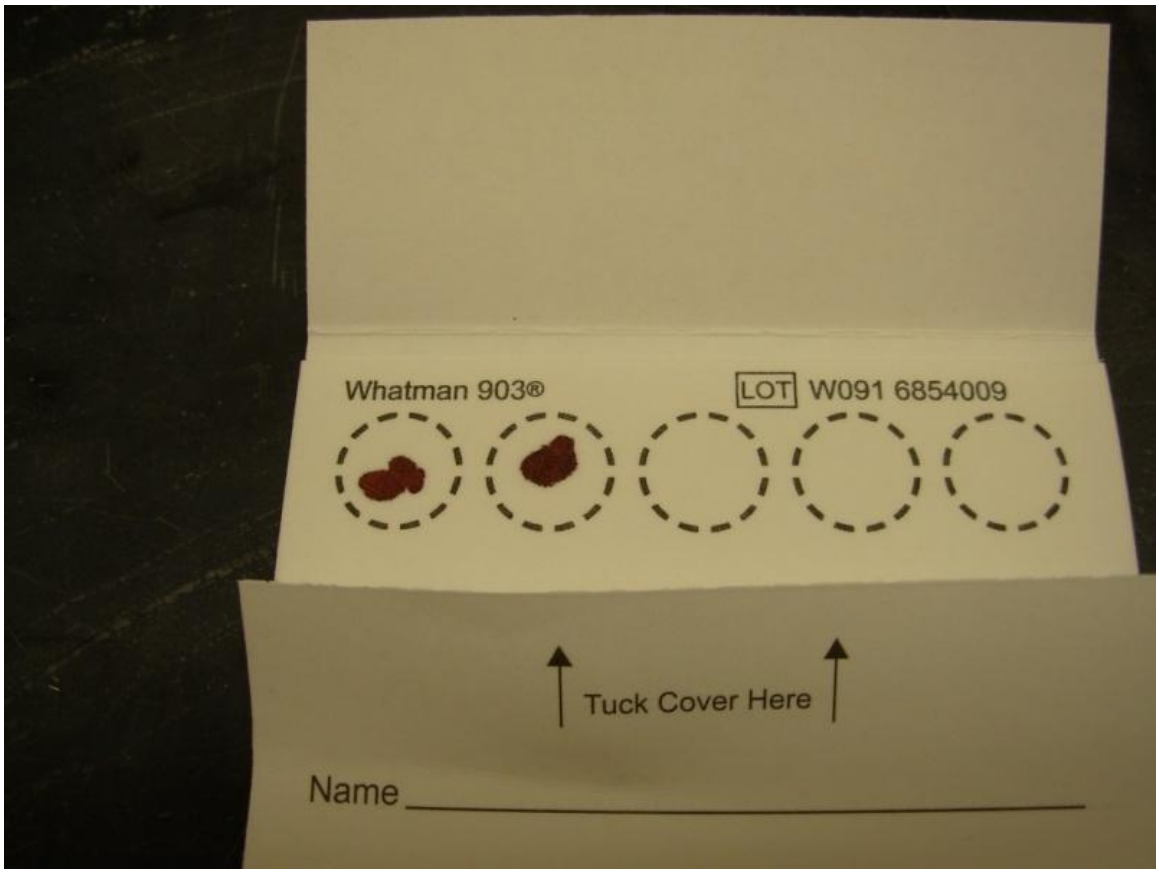


Acceptable Specimen: Back

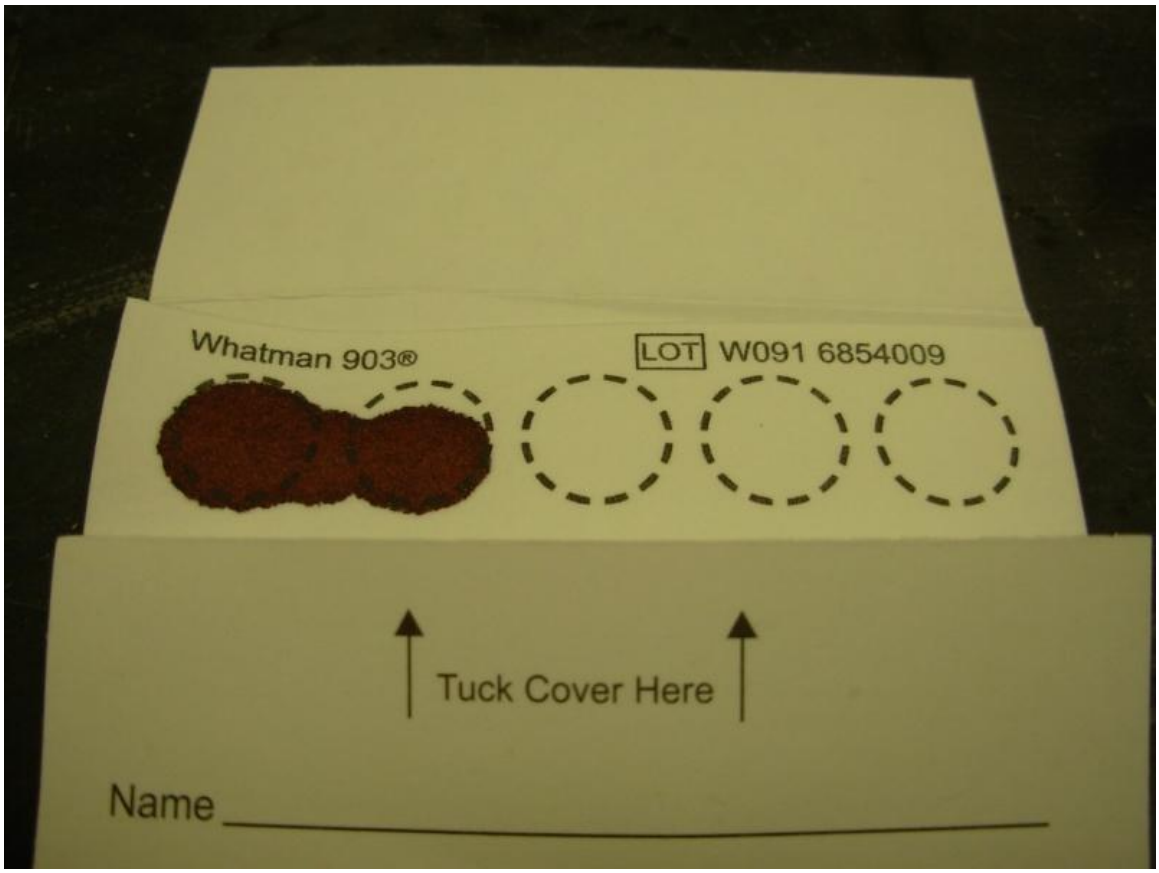


Acceptable Specimen: Front

Examples of Unacceptable Specimens



Unacceptable Specimen: Front



Unacceptable Specimen: Front